

RCoA Research, Education & Travel Grants 2015

Award: The Sargant Fund

Applicant: Dr Linden Baxter

Project Title: Country-wide implementation of WHO Surgical Safety Checklist in Madagascar

Project Description:

Critical deficiencies in the availability of safe surgery is a growing global health emergency requiring urgent attention. A lack of access to safe, affordable surgery causes more deaths worldwide than HIV, TB, and malaria combined¹. Stark geographic disparities in surgical services persist² despite clear evidence that their development in resource-poor settings is feasible³, cost-effective and integral to effective health systems¹.

The World Health Organisation's (WHO) Surgical Safety Checklist (SSC), is a low cost intervention that research repeatedly confirms is highly effective in increasing compliance with basic surgical safety standards. The SSC is associated with reductions in mortality and infections by up to 47% and other complications by 37%⁴. However, in parts of sub-Saharan Africa, several of the checklist's basic safety processes are frequently absent, e.g., 70% of operating rooms lack pulse-oximeters, and swab and instrument counting is not always routine.

To address this urgent need, Mercy Ships have developed a 3 day course specifically designed to teach implementation of the SCC in low income countries. Informed by experience in Guinea and Republic of Congo, the course tailors the SSC to each hospital's unique environment and develops local leadership and teamwork.

Following pilot courses run in 2 regional Madagascan hospitals, the Madagascan Minister of Health (MoH) is now supporting Mercy Ships to undertake a Quality Improvement Study (QIS) to train 20 regional hospitals, aiming to:

- Implement the SSC;
- Provide pulse-oximeters to each operating room;
- Evaluate the resultant change in safety culture;

Use of the 6 key safety steps in the checklist will be measured in this study as the primary outcome. Change in safety culture, evaluated using a validated survey tool, constitutes the secondary outcome. We will also assess surgical infrastructure and delivery, using World Federation of Societies of Anaesthesiologists (WFSA) standards for anaesthesia⁵ and recent Lancet Commission indicators for availability, accessibility and affordability of surgery.

I am joining a team of 2 Malagasy doctors and a project manager for six months to conduct this QIS, beginning September 2015. My responsibilities include:

- Teaching Malagasy doctors and nurses to use the SSC, especially Lifebox (pulse-oximetry), and counting of swabs and instruments;
- Training two Malagasy doctors to use SSC materials so they can deliver training themselves;

- Performing baseline assessments using standardised questionnaires on safety culture, basic infrastructure and resources;
- Recording participants, equipment donations and evaluation data;
- Assisting with course logistics and conducting follow-up visits at 3-4months to assess changes in safety culture and deliver further training aimed at identifying facilitators and inhibitors to change.

This clinically critical project meets NIAA assessment criteria by:

- Providing opportunities to develop project management and leadership experience and use initiative and innovation to solve problems in a challenging environment;
- Improving patient care and transforming health outcomes by promoting a safety culture, building local capacity through training in safe surgical practices and enabling further dissemination of knowledge;
- Increasing understanding of safety culture in low income settings, to inform future research on and implementation of safe surgical practice.

References

1. Global Surgery 2030: evidence and solutions for achieving health, welfare, and economic development, Meara, John G et al. *The Lancet* , Volume 386 , Issue 9993 , 569 – 624
2. Weiser TG, Regenbogen SE, Thompson KD, Haynes AB, Lipsitz SR, et al. (2008) An estimation of the global volume of surgery: A modelling strategy based on available data. *Lancet* 372: 139-144.
3. Ivers L, Garfein ES, Augustin J, Raymonville M, Yang AT, et al. (2008) Increasing access to surgical services for the poor in rural Haiti: Surgery as a public good for public health. *World J Surg* 32: 537-542.
4. Haynes AB, Weiser TG, Berry WR, et al. A surgical safety checklist to reduce morbidity and mortality in a global patient population. *N Engl J Med*. 2009; 350:491–499.
5. International Standards for a safe practice of Anaesthesia 2010 *Can J Anesth/J Can Anesth* (2010) 57:1027-1034 DOI 10.1007/s12630-010-9381-6